

SUMMARY

Subjects' exposure to ambient nicotine and TSP from all sources is measured over a 24 hour period using a personal monitoring technique.

Air from the subjects' immediate vicinity is drawn through two filters in series held in a small filter holder using a battery-operated pump.

Saliva samples are taken from subjects at the beginning and end of the 24 hour monitoring period.

Subjects maintain a diary during the 24 hour monitoring period and a detailed questionnaire is completed at the end of the monitoring period.

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OUTLINE PROCEDURE

PREPARATION OF THE PERSONAL MONITOR FOR A MONITORING SESSION

CLEAN THE FILTER HOLDER AND ASSOCIATED PARTS.

PREPARE THE ACID TREATED FILTER.

WEIGH THE TEFLON FRONT FILTER.

ASSEMBLE THE FILTER HOLDER.

CONNECT THE PUMP AND CHECK THAT THE HOLDER IS LEAK-TIGHT.

SET THE PUMP FLOW RATE AND NOTE THE PUMP COUNTER READING.

APPLY SECURITY TAG.

SEAL THE FILTER HOLDER INLET AND OUTLET WITH CAPS.

ASSEMBLE A FILTER AS A BLANK CHECK.

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OUTLINE PROCEDURE

STARTING THE MONITORING SESSION

TRAIN SUBJECT ON USING THE MONITOR AND USE OF THE DIARY.

TAKE SALIVA SAMPLE.

NOTE THE PUMP COUNTER READING.

REMOVE THE CAPS FROM FILTER HOLDER AND CONNECT PUMP.

CHECK THE SECURITY TAG.

START PUMP AND RECORD THE PUMP START TIME AND DATE.

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OUTLINE PROCEDURE

ENDING THE MONITORING SESSION

THE MONITORING SESSION WILL END 24 HOURS AFTER IT STARTS.

SWITCH OFF THE PUMP.

NOTE THE PUMP COUNTER READING AND THE PUMP STOP TIME.

CHECK THE SECURITY TAG.

SEAL THE FILTER HOLDER INLET AND OUTLET WITH CAPS.

TAKE SALIVA SAMPLE.

COMPLETE THE QUESTIONNAIRE AND COLLECT THE DIARY.

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OUTLINE PROCEDURE

FINAL CHECKS PRIOR TO ANALYSIS

CHECK INTEGRITY OF SECURITY TAG.

NOTE THE PUMP COUNTER READING.

CHECK THE HOLDER IS LEAK TIGHT.

CHECK PUMP FLOW RATE.

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EQUIPMENT1. MICROBALANCE

Sartorius model M3P (six decimal place) or equivalent. The balance should be mounted on a very stable surface and situated in a temperature controlled laboratory away from strong draughts.

The microbalance should stand on an earthen antistatic mat. During microweighing, the operator should be connected to this mat via an antistatic wrist-band strap. This arrangement eliminates static charge build-up arising from the operator and ambient conditions during microweighing.

2. CHECK-WEIGHT FOR MICROBALANCE

A 20 mg calibration weight was used as a check weight throughout the study. This weight is approximately the same as the weight of a Millipore Filter.

3. RADIOACTIVE SEALED SOURCE STATIC ELIMINATOR

BAR-TYPE: POLONIUM-210 (approximately
148 M Bcq)

CATALOGUE NUMBER: PDV 1

SUPPLIER: Amersham International PLC,
Buckinghamshire, England.

Polonium-210 radioactive static eliminators have a working lifetime of approximately one year.

4. FLUOROPORE MEMBRANE FILTERS

DIAMETER: 25 mm

PORE SIZE: 1 μ m

CATALOGUE NUMBER: FALP 02500

SUPPLIER: Millipore UK Ltd, Hertfordshire, England.

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5. PALLFLEX FILTERS

DIAMETER: 25 mm
CATALOGUE REFERENCE: FIBERFILM T60A20
SUPPLIER: PALLFLEX CORPORATION, Putnam,
Connecticut, USA

6. FILTER HOLDERS AND PERSONAL MONITOR FITTINGS

As supplied by Study Sponsor. (See Appendix 3 Figure 1 - Filter Holder).
(Appendix 3 Figure 2 - Filter Holder and Pump as Worn by Subject).

The pump is contained in a bag on a waist belt worn by the subject. These bags are commercially available but additional felt sound proofing was added to further reduce pump noise. The felt was sealed in polythene to prevent release of fibrous materials.

7. CONSTANT FLOW AIR SAMPLING PUMPS

MODEL NUMBER: 222-3
SUPPLIER: SKC Ltd, Dorset, England

8. AIRFLOW CALIBRATOR FOR PUMPS

TYPE: Gilibrator Soap-Film (20 mL/min to 6 l/min
flow cell)
MANUFACTURER: Gilian Instrument Corp, New Jersey, USA
SUPPLIER: Eden Scientific, Surrey, England

9. EQUIPMENT FOR SALIVARY COTININE SAMPLE COLLECTION

SALIVA SAMPLING EQUIPMENT: Salivette
SUPPLIER: Sarstedt, Beaumont, Leys, Leicester,
England. (See Appendix 3 Figures 3, A
and B).

10. SECURITY TAG

26 SWG Nichrome wire.
Uninsulated crimp connectors (Radiospares 532 670).
Crimper (Radiospares 532 636).

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PREPARING THE PERSONAL MONITOR

CLEANING AND PREPARATION OF THE HOLDER

Wash the filter holder body and the Teflon spacers in hot water containing a little detergent. Rinse these parts in distilled water and then in methanol. Dry all parts in an oven at 100°C and store in a smoke-free area.

PREPARATION OF THE ACID-TREATED FILTER

Immerse the Pallflex filter in a fresh 4% solution of sodium bisulphate for 30 seconds. Remove the filter and allow excess liquid to drain off. Place the filter on a clean watch glass and allow it to dry for a minimum of one hour in a desiccator. Store in the desiccator or a closed vessel until ready for use. (See Appendix 3 Figure 4).

NB: It is essential that these filters are dry before use or they will block completely on pumping.

These filters will absorb nicotine from the atmosphere.

WEIGH THE TEFLON FRONT FILTER

Ensure the balance has gone through its daily calibration check and that the check-weight is within 1 μg of the last check and 2 μg of the expected value determined at the start of the project.

Attach the earthing strap to a wrist before using the balance.

Handle the filter only with stainless steel tweezers and hold the filter under the static eliminator at a distance of 5 cm for about 10 seconds before each weighing.

Weigh the filter five times or until five consecutive weighings are each within a total range of 3 μg . Record the average weight of these five weighings. (See Figure 5).

If the balance calibration is not within the specified range, on a given day, correct the filter weight by the difference between the check weight and its expected weight.

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ASSEMBLE THE FILTER HOLDER

Using fine pointed stainless steel tweezers place the filters and Teflon spacers in the filter holder body as in the arrangement shown in Appendix 3 Figure 1.

Note that the dull face of the Millipore filter and the rough, cream face of the Pallflex filter should face the air inlet.

Assemble the entrance plate to the filter holder body ensuring that it fits over the rubber 'O' ring properly.

Screw on the clamping cover firmly.

Cap the filter holder inlet and outlet until ready for leak testing.

CONNECT THE PUMP AND CHECK THAT THE HOLDER IS LEAK-TIGHT

Remove the caps from the filter inlet and outlet.

Using a fully-charged pump, adjust the flow rate to 142 mL/min. Connect the pump inlet to the filter holder outlet using the plastic tubing provided, ensuring a tight connection at the pump and the filter holder.

Replace the tubing if a tight seal cannot be obtained.

Remove the cap from the filter holder inlet.

Turn on the pump briefly and ensure that it is running properly. Cap the filter holder inlet and check that the pump comes to a stop within 10 seconds. If the pump continues to run then the filter holder is not leak tight and should be checked.

Once the filter holder is leak tight attach the security tag by passing the Nichrom wire through two aligned holes in the filter holder and applying the crimp.

STARTING THE MONITORING SESSION

TRAINING THE SUBJECT ON USING THE MONITOR AND USE OF THE DIARY

Explain to the subject that the study is looking at air quality but do not mention that the primary purpose relates to cigarette smoke.

Show the subject how to wear the monitor and how to take it on and off when changing clothes or going to bed. Ask if he/she has any objection (eg safety) to wearing the monitor with the 'necklace'. Offer the use of safety pins if this is the case.

Ask the subject not to let the monitor interfere with normal behaviour.

Instruct the subject not to interfere with the monitor and not to let anyone else interfere with it. Explain that tampering with the monitor will be detected and will result in loss of the subject's reward.

Provide the subject with the security letter which explains that he/she is involved in an air quality study conducted by Hazleton. (See Appendix 3 Figure 7).

Explain that the subject should remove the monitor when he/she goes to bed and place the monitor nearby and upright such that the air inlet is not obstructed. If the pump is found to be too noisy during this time, the belt bag containing the pump can be placed in a larger bag or covered with a pillow. The filter holder must not be obstructed or covered in any way and the plastic tube connecting the pump to the filter holder must not be kinked.

Instruct the subject to complete the diary for each hour awake during the monitoring period. The main requirement is to record location, activity and factors which might affect air quality, including smoking. (See Appendix 3 Figure 8, pages 1 to 3).

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SET THE PUMP FLOW RATE AND RECORD THE PUMP COUNTER READING

Remove the cap from the filter holder inlet.

Connect the outlet of the pump to the flow meter and check the pump flow rate is between 136 and 142 mL/min. Record the flow rate. This work should be done in a clean area where no smoking is allowed and air should not be pumped through the assembled filter for more than two minutes. The amount of contamination of the filter in this time is negligible.

Record how many pump strokes are registered on the counter in a 1.00 minute period (approximately 250 depending on the individual pump). This figure will be used to check correct operation of the pump during the 24 hour sampling period.
(See Appendix 3 Figure 6).

Detach the plastic tubing from the filter holder outlet.

Cap the filter holder inlet and outlet.

Record the pump stroke counter reading.

ASSEMBLE A FILTER HOLDER AS A BLANK CHECK

For each series of personal monitors assembled on a given day, assemble one blank holder. Attach a pump and set the flow rate in the same way as for the other monitors. Cap the holder and retain until the group of personal monitors is returned for analysis.

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TAKE SALIVA SAMPLE

Remind the subject that a saliva sample is required at the beginning and end of the sampling period. Reassure the subject if necessary that only a chemical test and no medical tests will be done on the sample.

Collect the saliva sample according to the procedure in Figures 3, A and B.

Check that the sample tube is correctly labelled with the subject's code number and the date. Also ensure that the tube is labelled "pre-sample".

Centrifuge the salivette and transfer to a freezer (-20°C) as soon as possible and retain there until ready for use.

CONNECT THE PUMP AND RECORD THE PUMP COUNTER READING

Fit the pump into the belt bag with the plastic tubing passing through the hole provided in the bag.

Remove the filter holder outlet cap and connect the plastic tubing from the pump to the filter holder.

Record the pump stroke counter reading.

REMOVE CAP FROM FILTER HOLDER

Remove the filter holder cap from the air inlet. Do not leave the caps with the subject.

FIT THE MONITOR, START THE PUMP AND RECORD THE PUMP START TIME

Attach the 'necklace' to the filter holder and fit the personal monitor to the subject. Safety pins can be used in place of, or in addition to the necklace if necessary for a particular subject.

Switch on the pump and ensure that it runs at normal speed for at least 30 seconds. Record the pump start time.

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Close the belt bag.

Confirm the appointment for the end of sampling period in 24 hours time.

NB: A check list was carried by the investigator (See Appendix 3 Figure 10) to ensure study compliance at the beginning and end of the monitoring period. This was essential to ensure smooth running of the study and minimise the effect of outside distractions (eg children, telephone calls, visitor's questions etc).

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ENDING THE MONITORING SESSION

The monitoring session should end as close as possible to 24 hours after it started and certainly not at less than 23 hours or more than 25 hours.

SWITCH OFF THE PUMP

Open the belt bag and check that the pump is running normally. Switch off the pump and record the stroke counter reading and the switch-off time.

Check the security tag.

Disconnect the pump and cap the filter holder.

Take a saliva sample by the same procedure as at the start of the monitoring session.

Check that the sample tube is correctly labelled with the subject's code number and date and that it is a 'post-sample'.

Centrifuge the salivette and transfer to a freezer (-20°C) as soon as possible and retain there until ready for use.

COMPLETE THE QUESTIONNAIRE AND COLLECT THE DIARY

Do not explain to the subject that the main purpose of the study relates to cigarette smoking.

Complete the questionnaire as well as possible, (see Appendix 3 Figure 9, sections 1 to 6) making use of the diary to get answers which are as accurate as possible.

Collect the diary from the subject and keep it together with the questionnaire.

NB: Note the check list (Appendix 3 Figure 10).

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FINAL CHECKS ON RETURN TO THE LABORATORY PRIOR TO ANALYSIS

CHECK THAT THE SECURITY TAG IS INTACT

If the tag is not intact and was found not to be intact by the interviewer at the end of the sample period, do not proceed with the analysis.

RECORD THE PUMP STROKE COUNTER READING

Record the pump stroke counter reading.

Check that the laboratory record of stroke counts corresponds with those recorded by the interviewer for the start and end of the monitoring session.

Ensure that the total stroke counts recorded during the sampling session are consistent with continuous sampling for 24 hours using the stroke count rate determined when setting the flow rate.

CHECK THE HOLDER IS LEAK TIGHT

Remove the cap from the filter holder outlet and attach the pump.

With the filter holder inlet still capped, turn the pump on. The pump will stop within 10 seconds if the pump is leak tight. Record the result of this test.

CHECK THE PUMP FLOW RATE

Remove the filter holder inlet cap and measure the pump flow rate by connecting the pump outlet to the flow meter. The pump flow rate should be close to the 139 mL/min set prior to sampling and must be at least 120 mL/min.

Calculate and record the volume of the air sample collected in litres.

$$V_A = (V_1 + V_2) * T / 2000 \text{ litres.}$$

Where:

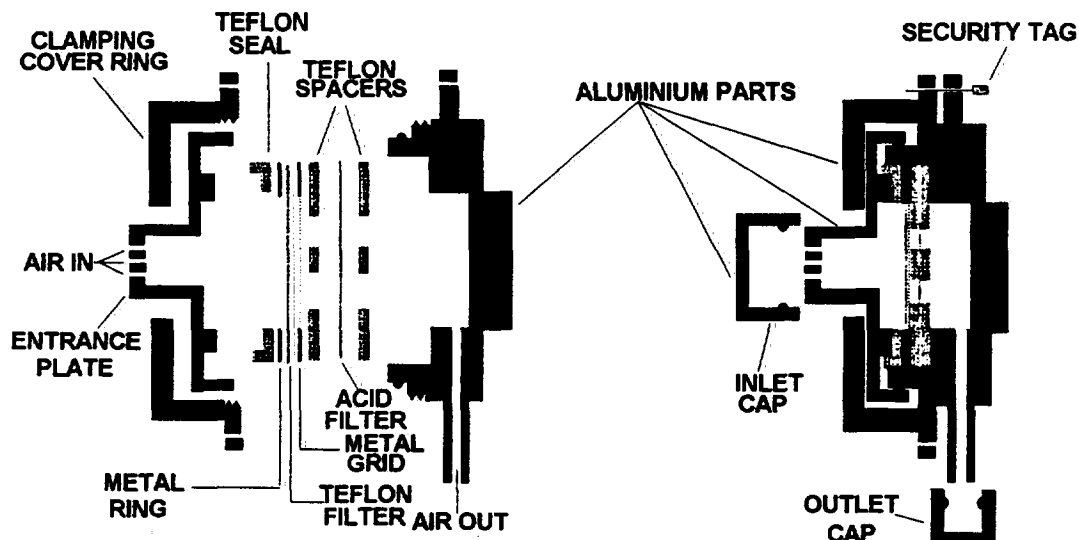
V_1 = pump flow rate at the start of sampling in mL/min.

V_2 = pump flow rate at the end of sampling in mL/min.

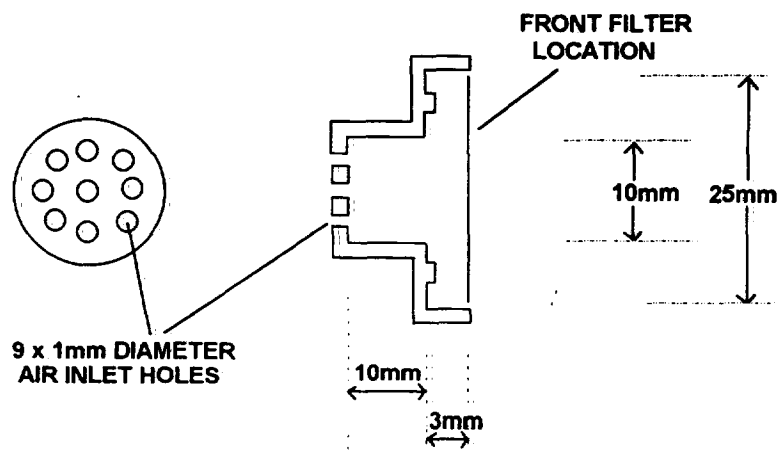
T = duration of the sampling period in minutes.

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APPENDIX 3 FIGURE 1



FILTER HOLDER APART AND ASSEMBLED



ENTRANCE PLATE DIMENSIONS

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APPENDIX 3 FIGURE 2



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APPENDIX 3 FIGURE 3A
SALIVETTE INSTRUCTIONS FOR USE

COLLECTION OF SALIVA

1. The cylindrical shaped swab (b) is removed from the insert (c) and placed in the mouth.

2. The swab is chewed for 30 to 45 seconds or until one can no longer prevent swallowing the saliva produced.

If the swab can not be chewed, it can be placed under the tongue for 30 to 45 seconds.

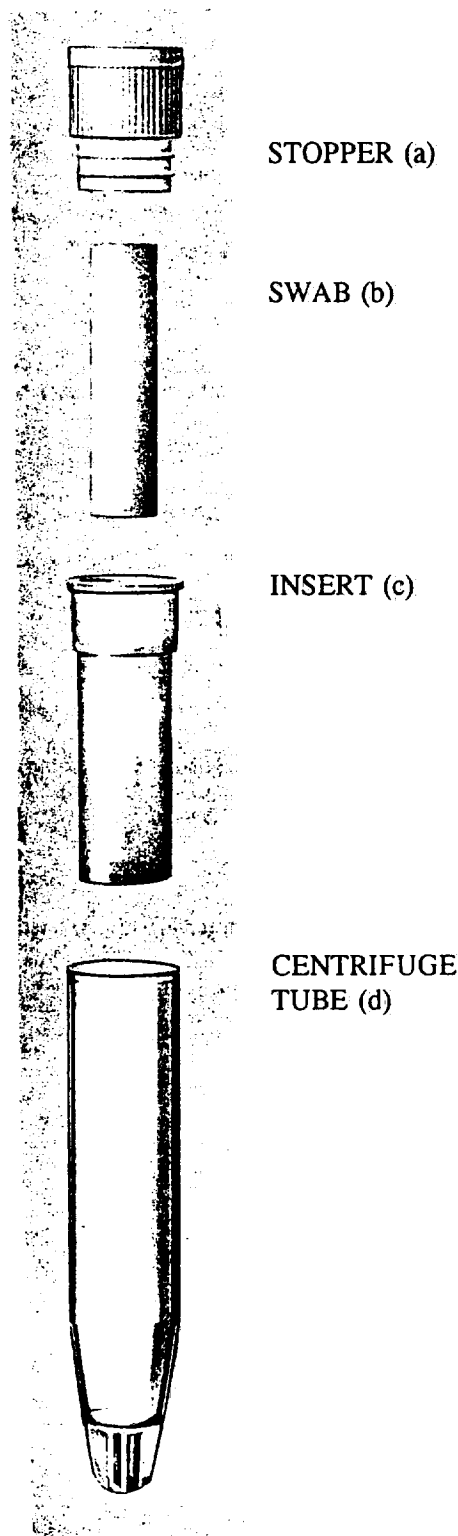
3. After the above procedure is complete, the swab is returned to the insert and the Salivette firmly closed with the stopper (a).

Storage conditions are dependent upon specimen use and have not been established.

RECOVERY OF SALIVA

4. The Salivette is centrifuged for two minutes at 1000 x G. Higher G forces result in only slightly higher yields of saliva.

During centrifugation, the saliva will pass from the cylindrical shaped swab through the hole in the bottom of the suspended tube into the clear centrifuge tube. Mucous strands and particles will be caught in the conical tip of the centrifuge tube allowing easy decanting of the clear saliva.



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APPENDIX 3 FIGURE 3B

**YOU HAVE BEEN ASKED TO PROVIDE A SALIVA SAMPLE: IT'S EASY!
CAREFULLY READ AND FOLLOW THE STEPS BELOW.**

1. Hold the vial in an upright position (cap at the top).
2. Remove the cap and hold the vial to your lips. (Do not touch the cotton pad with your fingers!).
3. Tilt the vial so that the cotton pad slides into your mouth.
4. Chew the cotton pad vigorously for a minute or two until the pad is completely saturated.
5. Place the vial to your lips and allow the cotton pad to slide back into the vial. DO NOT SPIT INTO THE VIAL and DO NOT USE YOUR FINGERS. If you need to, use your tongue to guide the pad back into the vial.
6. Put the cap back on the vial.

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APPENDIX 3 FIGURE 4

STUDY : 12/64

CHECK LIST

ACTUAL STUDY

PRIOR TO SAMPLE COLLECTION

The following table charts the analysis of Monitor units for despatch

on

TEST SYSTEM		MONITOR UNIT		TEFLON FILTER	NICOTINE FILTER		SALIVA POT		DONE
SUB	UNIT	WASH	DRY	WEIGHED	SOAKED	DRY	PRE	POST	D/I

AFTER SAMPLE COLLECTION

TEST SYSTEM		SALIVA SPIN DOWN		TEFLON FILTER	TEFLON FILTER EXTRACTION		NICOTINE EXTRACT	MCHROM SET-UP	ANALYSES CHROMY/DATA		
SUB	UNIT	PRE	POST	WEIGHED	UVPM/PPM	NICOT1	NICOT2	M/C/RS	LC	GC	DP

Comments :

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APPENDIX 3 FIGURE 5



AIR QUALITY SURVEY - HUK STUDY NUMBER 12/64

PERSONAL DETAILS	
Volunteer number:	Name:
Monitor number:	Address:
	Postcode:

DETERMINATION OF TOTAL PARTICULATES	
<u>PRE-EXPOSURE</u> : Calibration weight = _____ mg	
Weighings performed by _____ Date: _____	
wt filter 1 _____ mg	
2 _____ mg	
3 _____ mg	
4 _____ mg	
5 _____ mg	Mean _____ mg
	(W1)
<u>POST-EXPOSURE</u> : Calibration weight = _____ mg	
Weighings performed by _____ Date: _____	
wt filter 1 _____ mg	
2 _____ mg	
3 _____ mg	
4 _____ mg	
5 _____ mg	Mean _____ mg
	(W2)
<u>TOTAL PARTICULATES</u>	

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APPENDIX 3 FIGURE 6


**DETERMINATION OF TOTAL VOLUME OF AIR (VA) COLLECTED
(PROJECT NO 12/64)**

SUBJECT DETAILS				
NAME:		SUBJECT NUMBER:		
ADDRESS:		POST CODE:		
EQUIPMENT				
PUMP NUMBER:		MONITOR NUMBER:		
MONITORING				
CALIBRATION DATE:		START DATE:	END DATE:	DIFFERENCE
Leak tested OK:	Y / N	Y / N	Y / N	
Tag OK:	Y / N	Y / N	Y / N	
Flow rate:	V ₁		V ₂	
Count/minute:	C ₁		C ₂	C ₂ -C ₁ :
	C ₂		C ₃	C ₃ -C ₂ :
Pump counts:				
Pump on/off (time):				T mins
Saliva sample OK:		Y / N	Y / N	
Calibrated by:				
Operator/checked by:				

VA CALCULATION

$$V_A = (V_1 + V_2) \times T / 2000 =$$

<div style="text-align: right;">VA =</div>	
Calculated by:	Date:
Checked by:	Date:

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FLOW RATE CALIBRATION			
START		END	
Signed:		Signed:	
Date:		Date:	

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APPENDIX 3 FIGURE 7

Keith Phillips, CChem, FRSC
Manager, Department of Environmental Sciences



Otley Road, Harrogate
North Yorkshire HG3 1PY England

TO WHOM IT MAY CONCERN

Telephone: (0423) 500011
Telex: 57735
Telefax: 0423 525620
GP4 569595
Cables: Hazlabs Harrogate

Hazleton UK Ltd.
Registered in England No. 1171833
Registered Office as above.

AIR QUALITY SURVEY - REFERENCE 12/64

The Department of Environmental Sciences at Hazleton UK is conducting an air quality survey as part of a study in the Yorkshire area. We are interested in all locations including homes, travel, workplaces, leisure situations etc.

As part of this survey, the volunteer will wear a monitor for 24 hours as they go about their daily lives. The volunteers and hence locations have been randomly selected and therefore do not imply any potential areas of poor air quality. The locations will not be specifically identified or mentioned by name in any report produced from this survey.

The monitor which does not need a power supply is contained in a small bag. It is quiet, unobtrusive and safe. The bearer of this letter will be wearing the monitor and can explain some of it's features if necessary.

If you require further information please contact me at the above address or telephone number during office hours, 0900-1700 Monday to Friday and quote reference 12/64. Messages can be left at any time out of office hours on the Volunteer Selection Freephone number 0800 591570.

Thank you in advance for your cooperation in this matter.

Yours sincerely

Keith Phillips
Manager, Department of Environmental Sciences
for Hazleton UK

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APPENDIX 3 FIGURE 8

(PAGES 1 TO 3)

PAGE 1

INSTRUCTIONS FOR COMPLETION OF THE HOURLY DIARY				
1. Please summarise briefly what you did in each hour of the study period and where you were at that time.				
2. Please give brief details of any observations you think might have affected air quality.				
3. Please indicate the air quality by ticking the yes or no box.				
4. Please complete both page 2 and 3 of the diary.				
5. If in doubt as to how to proceed, please telephone Recruitment free on 0800 591 570 during office hours (0845 - 1700 hours Monday to Thursday and 0845 - 1630 on Friday)				
EXAMPLE				
TIME	SUMMARY OF ACTIVITIES AND LOCATION	AIR QUALITY	YES	NO
1800 - 1900 hours	Cooked Tea Had a bath	Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking	✓	✓ ✓ ✓ ✓ ✓
1900 - 2000 hours	watched T.V. walked to pub through woods	Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking	✓	✓ ✓ ✓ ✓ ✓
2000 - 2100 hours	In pub	Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking	✓	✓ ✓ ✓ ✓ ✓
2100 - 2200 hours	Still in pub	Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking	✓	✓ ✓ ✓ ✓ ✓
2200 - 2300 hours	walked home along a road watched T.V.	Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking	✓	✓ ✓ ✓ ✓ ✓
2300 - 2400 hours	Made Supper went to bed	Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking	✓	✓ ✓ ✓ ✓ ✓

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PAGE 2

DIARY - PLEASE READ INSTRUCTIONS ON SHEET 1 CAREFULLY BEFORE COMPLETING				
TIME	SUMMARY OF ACTIVITIES AND LOCATION	AIR QUALITY	YES	NO
0600 - 0700 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
0700 - 0800 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
0800 - 0900 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
0900 - 1000 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1000 - 1100 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1100 - 1200 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1200 - 1300 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1300 - 1400 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1400 - 1500 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1500 - 1600 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1600 - 1700 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1700 - 1800 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		

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PAGE 3

DIARY - PLEASE READ INSTRUCTIONS ON SHEET 1 CAREFULLY BEFORE COMPLETING				
TIME	SUMMARY OF ACTIVITIES AND LOCATION	AIR QUALITY	YES	NO
1800 - 1900 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
1900 - 2000 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
2000 - 2100 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
2100 - 2200 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
2200 - 2300 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
2300 - 2400 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
2400 - 0100 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
0100 - 0200 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
0200 - 0300 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
0300 - 0400 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
0400 - 0500 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		
0500 - 0600 hours		Good Ventilation Air Conditioning Paint Fumes Tobacco Smoke Cooking		

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APPENDIX 3 FIGURE 9

(SECTIONS 1 TO 6)

Subject no

AIR QUALITY SURVEY QUESTIONNAIRE

SECTION 1

INTERVIEWER'S NAME.....
DATE.....
SUBJECT'S NAME.....
AGE.....
MALE/FEMALE.....
MARRIED/PARTNER/SINGLE.....
LIVING WITH SPOUSE/PARTNER.....
ADDRESS.....
POST CODE.....
OCCUPATION.....
OCCUPATION POST-CODE.....

Subject no

AIR QUALITY SURVEY QUESTIONNAIRE

SECTION 2

1. DID THE MONITOR WORK PROPERLY FOR THE WHOLE TEST PERIOD?.....
2. WAS THE MONITOR KEPT IN YOUR VICINITY AT ALL TIMES?
3. WAS THE MONITOR INTERFERED WITH BY ANYBODY?.....
4. DID ANYONE DELIBERATELY BLOW SMOKE INTO THE MONITOR?.....
5. DID YOU SPEND ANY TIME IN A DUSTY ATMOSPHERE?.....
6. DID YOU SPEND ANY TIME NEAR HEAVY TRAFFIC?.....
7. IS YOUR HOME / ACCOMMODATION NEAR A BUSY ROAD?.....
8. WHICH AEROSOL SPRAYS/ OTHER SPRAYS/PERFUME SPRAYS DID YOU USE?
9. WHAT TYPE OF HEATING IS USED IN YOUR HOME/ACCOMMODATION?.....
10. DID YOU USE THE VACUUM CLEANER OR DID ANYONE ELSE USE IT WHILE YOU WERE THERE?.....
11. DID YOU DO, OR WERE YOU NEAR, ANY PAINTING OR DECORATING?.....
12. DID YOU DO, OR WERE YOU NEAR, ANY COOKING?.....
13. WAS ANY FRYING DONE WHILE YOU WERE NEARBY?.....
14. HOW DO YOU RATE THE GENERAL AIR QUALITY IN THE REGION WHERE YOU LIVE?
Very Good Good Moderate Poor Very Poor

Subject no

AIR QUALITY SURVEY QUESTIONNAIRE

SECTION 3

15. HOW DO YOU RATE YOUR AVERAGE EXPOSURE TO TOBACCO SMOKE DURING THE TEST PERIOD?

None * Low Moderate High Very High

* IF NONE PROCEED TO QUESTION 18

16. FOR HOW MANY HOURS OF THE TEST PERIOD WAS THE EXPOSURE TO TOBACCO SMOKE?

None.....Low.....Moderate.....High.....Very High.....

(TOTAL IS DURATION OF TEST PERIOD)

17. WHAT PERCENTAGE OF YOUR TOTAL EXPOSURE TO TOBACCO SMOKE IN THE TEST PERIOD DO YOU ESTIMATE THAT OCCURRED: (TOTAL IS 100%)

At home/accommodation.....At work.....In travel.....During leisure.....

18. HOW DID YOUR EXPOSURE TO TOBACCO SMOKE DURING THE TEST PERIOD COMPARE WITH YOUR AVERAGE EXPOSURE LEVEL OVER THE LAST SIX MONTHS? EXPOSURE IN THE TEST PERIOD WAS:

Much less than normal.

Less than normal.

Fairly typical of average exposure.

More than normal.

Much more than normal.

19. WHAT PERCENTAGE OF YOUR TOTAL EXPOSURE TO TOBACCO SMOKE IN THE LAST SIX MONTHS DO YOU ESTIMATE THAT OCCURRED: (TOTAL IS 100%)

At home/accommodation.....At work.....In travel.....During leisure.....

20. FROM THE FOLLOWING LIST CAN YOU PLACE IN ORDER THE FOUR MAIN SOURCES OF YOUR EXPOSURE TO TOBACCO SMOKE DURING THE LAST SIX MONTHS? (NUMBER AS 1 TO 4)

Work.....Travel.....Leisure.....Spouse/Partner.....Father.....Mother.....

Son.....Daughter.....Brother.....Sister.....Friends.....Other People.....

Own Smoking.....None.....

Subject no

AIR QUALITY SURVEY QUESTIONNAIRE

SECTION 4

21. HOW MANY HOURS IN THE TEST PERIOD DID YOU SPEND AT HOME /
ACCOMMODATION?.....
 22. HOW MANY HOURS IN THE TEST PERIOD DID YOU SPEND AT WORK (EXCLUDING
WORK-RELATED TRAVEL)?.....
 23. HOW MANY HOURS IN THE TEST PERIOD DID YOU SPEND IN TRAVEL (INCLUDING
WORK-RELATED TRAVEL)?.....***
 24. HOW MANY HOURS IN THE TEST PERIOD DID YOU SPEND AT
LEISURE?.....
(This does not include leisure at home)
- (TOTAL TIME FOR HOME, WORK, TRAVEL AND LEISURE SHOULD BE DURATION OF
TEST PERIOD)

DEFINITIONS

HOME Normal place of abode in recent weeks.

ACCOMMODATION Place of stay during the study period if not at home.

WORK** Occupation or employment but not housework or other work at own home.

TRAVEL All forms of transport unless a sporting activity.

LEISURE All time spent when not at home/accommodation, not at work and not in travel

Subject no

AIR QUALITY SURVEY QUESTIONNAIRE

SECTION 4 (continued)

SECTION 4A (THE HOME)

25. WHAT TYPE OF HOME / ACCOMMODATION DID YOU STAY IN DURING THE TEST PERIOD?
- House Flat Caravan Hotel Other.....
26. HOW WELL VENTILATED IS THE HOME / ACCOMMODATION?
- Good Moderate Poor
27. IS THIS YOUR NORMAL PLACE OF ACCOMMODATION DURING THE LAST MONTH?.....
28. DID ANYONE SMOKE IN YOUR HOME / ACCOMMODATION DURING THE TWO DAYS PRIOR TO THE TEST PERIOD?.....
29. DID ANYONE SMOKE IN YOUR HOME / ACCOMMODATION DURING THE TEST PERIOD?.....
- Spouse/Partner Father Mother Sister Brother Son Daughter Visitor
Other.....
30. FOR HOW MANY HOURS IN YOUR HOME / ACCOMMODATION WERE YOU IN THE SAME ROOM AS SOMEONE SMOKING DURING THE TEST PERIOD?.....
31. HOW DO YOU RATE YOUR EXPOSURE TO TOBACCO IN YOUR HOME / ACCOMMODATION DURING THE TEST PERIOD?
- None Very Low Low Moderate High Very High

SECTION 4B (LEISURE)

32. IN WHICH OF THE FOLLOWING DID YOU SPEND LEISURE TIME?
- Pub Restaurant Club Cinema Church Sport Education Visiting Shopping
Others.....
33. FOR HOW MANY HOURS AT LEISURE WERE YOU IN THE PRESENCE OF SMOKING?.....
34. HOW DO YOU RATE YOUR EXPOSURE TO TOBACCO SMOKE AT LEISURE DURING THE TEST PERIOD?
- None Very Low Low Moderate High Very High

Subject no

AIR QUALITY SURVEY QUESTIONNAIRE

SECTION 4 (continued)

SECTION 4C (WORK)** If question 22 = none proceed to Section 4D
(ALL travel should be reported in Section 4D)

35. HOW MANY HOURS AT WORK DID YOU SPEND INSIDE A BUILDING?.....
36. HOW MANY HOURS AT WORK DID YOU SPEND IN THE OPEN AIR?.....
- If no work is indoors proceed to Question 41
37. HOW GOOD IS THE VENTILATION IN THE MAIN AREA WHERE YOU WORK INDOORS?
- Good Moderate Poor
38. IS THERE AIR CONDITIONING IN THE MAIN AREA WHERE YOU WORK INDOORS?.....
39. IS SMOKING PERMITTED IN THE MAIN AREA WHERE YOU WORK INDOORS?.....
40. IS THERE A SPECIAL AREA SET ASIDE FOR SMOKING?.....
41. FOR HOW MANY HOURS AT WORK DURING THE TEST PERIOD WERE YOU IN THE PRESENCE OF SMOKING?.....
42. HOW DO YOU RATE YOUR EXPOSURE TO TOBACCO SMOKE AT WORK DURING THE TEST PERIOD?
- None Very Low Low Moderate High Very High

SECTION 4D (TRAVEL)

43. WHICH FORMS OF TRAVEL DID YOU USE DURING THE TEST PERIOD (DO NOT INCLUDE IF FOR SPORT) ?
- Car Bus Train Plane Motorcycle Cycle Walking Other.....
44. FOR HOW MANY OF THESE HOURS OF TRAVEL WERE YOU IN THE PRESENCE OF SMOKING?.....
45. HOW DO YOU RATE YOUR EXPOSURE TO TOBACCO SMOKE WHILE TRAVELLING DURING THE TEST PERIOD?
- None Very Low Low Moderate High Very High

Subject no

AIR QUALITY SURVEY QUESTIONNAIRE

SECTION 5

SECTION 5A (SPOUSE SMOKING) If no spouse or partner proceed to Section 5B

46. DOES YOUR SPOUSE/PARTNER SMOKE AT PRESENT?.....
47. HAS YOUR SPOUSE/PARTNER EVER SMOKED SINCE YOU HAVE BEEN TOGETHER?
.....
If spouse/partner is a non-smoker proceed to Section 5B
48. HOW MANY CIGARETTES DOES YOUR SPOUSE/PARTNER NORMALLY SMOKE PER DAY?
49. HOW MANY CIGARETTES DOES YOUR SPOUSE/PARTNER NORMALLY SMOKE ANYWHERE IN YOUR PRESENCE PER DAY?.....
50. HOW MANY CIGARETTES DID YOUR SPOUSE/PARTNER SMOKE ANYWHERE IN YOUR PRESENCE DURING THE TEST PERIOD?.....
51. FOR HOW MANY HOURS DID YOUR SPOUSE/PARTNER SMOKE ANYWHERE IN YOUR PRESENCE DURING THE TEST PERIOD?.....
52. DID YOUR SPOUSE/PARTNER SMOKE A PIPE OR CIGARS ANYWHERE IN YOUR PRESENCE DURING THE TEST PERIOD?
53. HOW DO YOU RATE YOUR EXPOSURE TO YOUR SPOUSE'S/PARTNER'S TOBACCO SMOKE DURING THE TEST PERIOD?
None Very Low Low Moderate High Very High

SECTION 5B (SMOKING BY OTHER MEMBERS OF HOUSEHOLD)

54. DOES ANY OTHER MEMBER (NOT INCLUDING SPOUSE/PARTNER) OF YOUR HOUSEHOLD SMOKE?.....

If no other smokers in same accommodation proceed to Section 6
55. FOR HOW MANY HOURS DID OTHER MEMBERS (NOT INCLUDING SPOUSE/PARTNER) OF YOUR HOUSEHOLD SMOKE IN YOUR PRESENCE AT YOUR ACCOMMODATION DURING THE TEST PERIOD?.....
56. FOR HOW MANY HOURS DID OTHER MEMBERS (NOT INCLUDING SPOUSE/PARTNER) OF YOUR HOUSEHOLD SMOKE IN YOUR PRESENCE ANY WHERE ELSE DURING THE TEST PERIOD?.....
57. HOW DO YOU RATE YOUR EXPOSURE TO TOBACCO SMOKE FROM OTHER MEMBERS OF YOUR HOUSEHOLD (NOT INCLUDING SPOUSE/PARTNER) DURING THESE HOURS OF SMOKING?

None Very Low Low Moderate High Very High

Subject no

AIR QUALITY SURVEY QUESTIONNAIRE

SECTION 6

- 58. HOW MANY CIGARETTES DID YOU SMOKE DURING THE TEST PERIOD?.....
- 59. HOW MANY CIGARETTES DID YOU SMOKE DURING THE LAST WEEK?.....
- 60. HOW MANY CIGARETTES DID YOU SMOKE DURING THE LAST YEAR?.....
- 61. WHEN DID YOU LAST SMOKE?.....
- 62. FOR HOW MANY YEARS HAVE YOU SMOKED DURING YOUR LIFE?.....
- 63. WHAT WAS THE AVERAGE NUMBER OF CIGARETTES SMOKED PER DAY DURING THESE YEARS OF SMOKING?.....

COMMENTS ABOUT THE TEST PERIOD BY THE SUBJECT.

COMMENTS BY THE INTERVIEWER.

APPENDIX 3 FIGURE 10

	✓
Address / right volunteer	
Check paperwork / correct pump	
Ask for saliva sample 1 ¼ to 1 ½ minutes, must be very moist, place in bag	
Take necklace and monitor / assembly	
Tubing attach to monitor, firmness of fit, if off	
Describe bag and contents	
Note pump reading (counts) / check it	
Switch on pump, note time, check for leaks	
Take off cap to filters	
Tag for security	
Wrap pump up, place in bag, check tubing	
Place on volunteer, explain belt etc	
Pump stops, note approximately when, check tube not pump	
Check pump / tubing if you suspect problem	
Noise at night, with you at all times or	
Dangerous activity	
Problems with entry use	
Letter	
24 to 25 hours, diary and fill out questionnaire	
COLLECTION	
Saliva sample	
Check security tag	
Check for leaks	
Note time switched off	
Check reading	
Questionnaire	

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